REMARKS

The rejection of Claims 1-9 and 19-20 under 35 U.S.C. § 103(a) as unpatentable over U.S. 6,777,152 (Konya et al '152)[1] in view of U.S. 2003/0044706 (Konya et al '706), is respectfully traversed.

At the outset, Konya et al '706, on its face, claims foreign priority of two applications. Konya et al '152, on its face, is stated to be a continuation-in-part (CIP) of the application published as Konya et al '706, and claims foreign priority of the same two applications and an additional third application. Therefore, it does not appear that Konya et al '706 adds anything to Konya et al '152. Thus the following discussion will be with regard to Konya et al '152 only, and for purposes of simplicity, will refer to this reference as Konya et al.

Konya et al discloses spherical complex oxide fine particles of amorphous-silica-titania having a particle size of 10-300 nm, a specific surface area of 10-100 m^2/g, and a titania content of 1-99% by weight, which is obtained by atomizing a siloxane and an organic titanium compound in a flame for combustion (column 2, lines 11-17), which fine particles may be hydrophobized by introducing at their surface units represented by the following formula (1):

$$R^1_xR^2_yR^3_zSiO_{(4-x-y-z)/2} \qquad (1)$$

wherein R^1, R^2 and R^3 each are independently a substituted or unsubstituted monovalent hydrocarbon group having 1 to 6 carbon atoms, x, y and z each are an integer of 0 to 3, x+y+z is from 1 to 3 (column 2, lines 42-51 and column 7, lines 55-65). The only type of compounds specifically disclosed for such hydrophobization are silazane compounds (column 7, line 66 through column 8, line 18). Hexamethyldisilazane was used in all the examples therein. Thus, Konya et al discloses only a one-step hydrophobization.

[1] The Examiner has not made Konya '152 of record. The Examiner is respectfully requested to make this patent of record on a Form PTO-892 in the next Office Action.

The process embodiment of the present invention, on the other hand, is characterized by a **two-step** hydrophobization. Thus, as recited in Claim 2, this embodiment is drawn to a production process for making spherical silica-titania-based fine particles surface-treated with silane, having properties recited in Claim 1, comprising the steps of (A) producing hydrophobic spherical silica-titania fine particles by introducing $R^5SiO_{3/2}$ units [wherein, R^5 represents a substituted or unsubstituted monovalent hydrocarbon group of 1 to 20 carbon atoms] onto a surface of hydrophilic spherical silica-titania fine particles comprising SiO_2 units and TiO_2 units, and (B) introducing $R^7{}_3SiO_{1/2}$ units [wherein, said R^7 groups are either identical or different, and each represent a substituted or unsubstituted monovalent hydrocarbon group of 1 to 6 carbon atoms] onto a surface of said hydrophobic spherical silica-titania fine particles.

The only embodiment shown for the hydrophobization process of Konya et al is, in effect, analogous to present step (B) only. Thus, Konya et al neither discloses nor otherwise suggests the presently-claimed production process.

In addition, with regard to Claim 3 and claims dependent thereon, which requires a step for hydrolyzing and condensing in a mixed liquid of water and a hydrophilic organic solvent in the presence of a basic material, Konya et al's corresponding process involves mixing of their siloxane and their organic titanium compound in liquid form and fed to a burner or separately fed to a burner whereby the mixture is atomized from the nozzle of the burner (column 4, line 44ff). While the organic titanium compound, if a solid at room temperature, may be dissolved in a solvent (column 4, line 38ff), water is not listed as a possible solvent, nor is a basic material disclosed.

Applicants have shown by comparative data in the specification that when one or more limitations of the claimed process are not satisfied, such as omission of step (A), a

spherical silica-titania-based fine particle surface-treated with silane having the properties recited in Claim 1 is not obtained.

The spherical silica-titania-based fine particles surface-treated with silane of Claim 1 has a titanium atom content within a range from 0.001 to 5% by weight, frictional electrification with iron powder within a range from -100 to -300 μC/g, bulk density within a range from 0.2 to 0.4 g/ml, and particle diameter within a range from 0.01 to 5 μm.

Examples 1 and 2 are according to the presently-claimed invention; Comparative Examples 1-5 are not. Comparative Example 5 is particularly pertinent, since it is similar to the hydrophobized fine particles of Konya et al. In Comparative Example 5, the step analogous to step (A) of present Claim 2 was omitted; only step (B) was carried out in order to hydrophobize the hydrophilic fine particles. As Table 1 at page 21 of the specification herein shows, Comparative Example 5 produces spherical silica-titania-based fine particles surface-treated with silane that meets neither the frictional electrification nor bulk density limitations of Claim 1, and what is more, Comparative Example 5 was inferior to the examples with regard to degree of aggregation, toner adhesion, relative image density at both high temperature, high humidity and low temperature, low humidity conditions, and image quality of highlight parts printed out under both high temperature, high humidity and low temperature, low humidity conditions. These properties are described in the specification at page 17, line 17 through page 19, line 20.

Thus, the comparative data show that a process analogous to Konya et al does not result in spherical silica-titania-based fine particles surface-treated with silane as claimed in Claim 1.

For all the above reasons, it is respectfully requested that this rejection be withdrawn.

The objection to various claims is respectfully traversed. The objection is now moot, except for the objection to Claims 2-3 and 6 because it uses brackets rather than parentheses.

However, contrary to the finding by the Examiner, single brackets are no longer used to denote deletion of text; rather, the present rules prescribe double brackets for deletion of five characters or fewer; otherwise, a strikethrough must be used. See 37 C.F.R. § 1.121(c)(2). Thus, under existing rules, no confusion can result from the use of single brackets. Indeed, Applicants respectfully submit that replacing the brackets with parentheses using the present claim amendment regime would confuse the issue. Finally, if this is the only remaining issue to allowability, Applicants have no objection to the Examiner replacing the brackets with parentheses by Examiner's Amendment.

For all the above reasons, it is respectfully requested that the objection be withdrawn.

Applicants respectfully call the Examiner's attention to the Information Disclosure Statement (IDS) **submitted herewith**. The IDS includes the prior art described in the specification at pages 2-3, except for Patent Reference 4, since EP 1035450 A2, which is from the same patent family, is already of record. The Examiner is respectfully requested to initial the Form PTO 1449 submitted herewith, and include a copy thereof with the next Office communication.

All of the presently-pending claims in this application are now believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Respectfully submitted,

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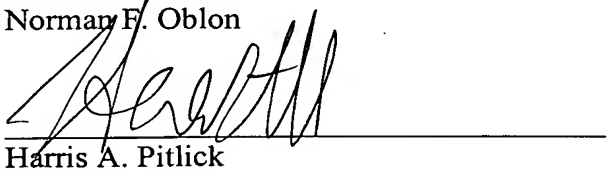

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